Space Weather Forecast

Issued on Saturday, 11 March 2023 at 13:08 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

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Space Weather Forecast Headline: Chance of isolated Moderate class flares (R1-R2/Minor-Moderate radio blackouts) throughout.

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Solar activity has been Low, with only Common-class flares. The largest from a moderately large bipolar region in the southwest quadrant. The other region of most note is a moderately large bipolar region in the northwest quadrant, which has shown decay in its trailer spots. There are currently ten sunspot regions on the visible disc, with the majority small, magnetically simple, and either stable or slowly evolving. Currently no Earth directed CMEs (coronal mass ejections) have been observed in available imagery, however model results are awaited for two recent fairly slow but broad CMEs observed leaving the southwest disk on the 10th.

Solar Wind / Geomagnetic Activity: The solar wind speed has shown a steady trend at slightly elevated to near background levels. Total magnetic field strength was weak. The important north-south component also varied weakly. Geomagnetic activity was Quiet to Unsettled.

Energetic Particles / Solar Radiation: No solar radiation storms were observed.

Four-Day Space Weather Forecast Summary

Solar Activity: Solar activity is likely to remain generally Low. But with the number of active regions on the disk there remains a chance of an isolated Moderate-class flares, perhaps most likely from two moderately large regions in the northwest and southeast.

Solar Wind / Geomagnetic Activity: No CMEs are currently forecast to affect the Earth in the next four days, however model results are awaited for two recent fairly slow but broad CMEs from the southwest disk which could perhaps bring glancing blows later in the period. Solar winds are expected to be at mainly slow levels over the next few days, with no further coronal hole connections forecast to give appreciable enhancements. Geomagnetic activity is likely to be mostly Quiet to Unsettled (Kp 0-3) throughout the period, with a slight chance of an Active interval.

Energetic Particles / Solar Radiation: Solar radiation levels are most likely to stay at background levels, with a slight chance of reaching the S1/Minor Storm threshold or greater should any larger flares occur.

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Met Office Space Weather Forecast

Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	1	1	5	5
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	No	25	25	25	25
Very Active	R3 to R5 X	No	1	1	1	1

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	5	5	5	5
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)

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